California GARDEN

SEPTEMBER–OCTOBER 1977
Volume 68, Number 5
Fifty Cents

Larry Eifert

FLORAL EVENTS

Every Thursday starting September 1st: Workshops for the Christmas Show in the Floral Office at 10:00 a.m. to 3:00 p.m.

September 27, October 4, October 11, October 18, 1977: Adrienne Green Flower Arranging Classes, Room 101, Casa del Prado, Balboa Park. For reservations and information call Mrs. Roland Hoyt at 296-2757.

October 1 & 2, 1977: "Beauty and the Beast" – Flower Show and Plant Exhibit sponsored by the San Diego Floral Association at the Wild Animal Park; 9:00 a.m. to 5:00 p.m. both days; for information call the Floral Office at 232-5762.

October 11, 1977, and thereafter on Second Tuesday 10:00 a.m. to noon, Mrs. John Kirkpatrick demonstrates her beautiful flower arranging techniques.

October 18, 1977: Floral Association Meeting at 7:30 p.m. in Room 101, Casa del Prado, Balboa Park.

SHOWS

September 17 & 18, 1977: San Diego Bromeliad Show; Majorca Room, Casa del Prado, Balboa Park, open both days 11:00 a.m. to 5:00 p.m.; FREE.

September 24 & 25, 1977: San Diego Bonsai Fall "mini" Show; Majorca Room, Casa del Prado, Balboa Park, open Saturday 10:00 a.m. to 6:00 p.m.; Sunday 10:00 a.m. to 5:00 p.m.; FREE.

October 1 & 2, 1977: San Diego County Orchid Society Fall Show, Majorca Room, Casa del Prado, Balboa Park, open Saturday 11:00 a.m. to 5:00 p.m.; Sunday 10:30 a.m. to 5:00 p.m.; FREE.

October 15 & 16, 1977: North County Rose Society presents its 11th Annual Rose Show at the Escondido Village Mall; open Saturday 1:00 p.m. to 6:00 p.m.; Sunday 1:00 p.m. to 5:00 p.m.; FREE.

October 15 & 16, 1977: San Diego Gesneriad Society presents its First Show in Room 104, Casa del Prado, Balboa Park; open Saturday 10:00 a.m. to 5:00 p.m.; Sunday 10:00 a.m. to 4:00 p.m.; FREE.

October 22 & 23, 1977: Ohara Chapter of San Diego Ikebana Show, Casa del Prado, Balboa Park; open both days 11:00 a.m. to 4:30 p.m.; FREE.

October 29 & 30, 1977: Crown Garden Club of Coronado presents its 18th Annual Show "Reading, Rooting 'n Arranging"; Coronado Public Library, 700 Orange Avenue, Coronado; open Saturday 1:00 p.m. to 6:00 p.m.; Sunday 10:00 a.m. to 5:00 p.m.; FREE.

October 30, 1977: Convair Garden Club Chrysanthemum & Fall Vegetable Show; Majorca Room, Casa del Prado, Balboa Park; open 1:00 to 5:00 p.m.; FREE.

November 5 & 6, 1977: San Diego Tropical Fish Aquarium & Koi Pond Show; Majorca Room and Patio A, Casa del Prado, Balboa Park; open Saturday 1:00 p.m. to 7:00 p.m.; Sunday 11:00 a.m. to 5:00 p.m.; FREE.

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Kate Sessions

A BOOK REVIEW

by Rosalie Garcia

KATE SESSIONS, by Elizabeth C. MacPhail, San Diego Historical Society, 153 pages, $5.50 and $8.50 (for sale at office of San Diego Floral Association).

Elizabeth MacPhail, a native San Diegan and an attorney, has given us a biography of a generous, talented woman, whom many still remember—one who left her imprint on our streets, parks and gardens, and who was a moving force in all that is beautiful around us. It reads like a love story, which it is: Kate and her plants. To San Diegans, most of whom have come here since 1940 and take for granted the lush beauty of the city, this book gives a foundation and understanding of how it happened. The span of time between 1884—1940, the "Kate Sessions period," is when the basic patterns were laid out.

Mrs. MacPhail's legal training and experience guided her research into source material from family records, albums, letters, newspapers, tax and court records, and interviews with friends and associates. A free flowing chronology, meticulously annotated makes the story easy to follow, and assures authenticity. The San Diego Historical Society is to be congratulated in sponsoring and publishing such a valuable contribution to local history. We are able to know that impressive personality that was Kate Sessions who had the dream and the drive to make things happen. We learn that Kate Sessions was not a native daughter, but was born in San Francisco on November 8, 1857. Her parents had met there after coming from Connecticut about 1850. She was graduated from the University of California at Berkeley in 1881 with a major in science—somewhat unusual for a woman of that day. It was natural for her to go into teaching, for that was about the only profession for an educated woman at that time.

She first came to San Diego in 1884 as the principal of the new Russ School on 12th Street where San Diego High and the City College now are located. In the whole district, there were only 942 children. She soon learned that school administration was not her field. She went to Assistant Principal then to teacher at $80.00 a month. She liked teaching, but not discipline. But she was conscious of the barren grounds around the school, and aided by her pupils, she planted trees and shrubs.

She had always had an interest in plants, but so far as Mrs. MacPhail could find out, she had no formal education in them. If she studied botany or horticulture at the University, there is no record. When she finished high school, she was given a trip to the Sandwich Islands (now Hawaiian) and was entranced with the poinsetties, bougainvillia and palms which she was delighted to recognize in San Diego.

In 1885, she had an opportunity to go into the nursery business with the Blaisdells, congenial San Diegans who had bought the San Diego Nursery and florist business at 5th and B Streets. She quit teaching forever and was on her way to her life work. At first she took care of the florist shop and soon it was recognized she had a way with flowers and for many years there was no "occasion" that she did not decorate or furnish a bouquet for. During this period, Coronado was being developed and the Del Coronado was built. The Blaisdells and Kate had a nursery and florist shop there also. But in 1887, the partnership was dissolved, with Kate keeping her businesses both in Coronado and in San Diego.

She nearly always worked seven days a week and had crews of men and women working for her. There was no doubt who was "boss". She was exacting, thorough and reliable and expected the same qualities from her employees. Those who could "take it" often went on to their own businesses, profiting from her teaching methods. Under pressure her vocabulary was said to be far from lady-like and incited many stories.

Although she was a handsome woman and had dressed well in her youth, as the years went by, she lost interest in appearance and chose her

clothes for utility and comfort, with large pockets in her ample skirts so she could carry many tools. Paintings of her owned by the City and the San Diego Floral Association depict her as a dignified, quietly dressed mature woman.

Being in a man's world of business, she was conscious and wary of her position and thought "modern" long before her time. Mrs. MacPhail records many incidents in her book which are delightful to know and read. One such incident occurred when Kate lost a case in court and was fined $10.00 for contempt because she had told the judge that women did not generally get justice in Courts of law. She stuck to her accusation, but did not have to pay the fine because she apologized to the judge—personally.

Kate did not like housework, and managed to get out of it her entire life in San Diego. She either "boarded" with friends or relatives or hired housekeepers when she had her own home.

Although she was in business and had a flair for promotion and advertising, she was always strapped for money. Because businessmen trusted her and her credit was good, she easily became over-extended. She made a good living, lured her family to San Diego and helped them establish allied businesses. However, profits were not her main interest—plants were. She had to have every new plant she heard about. She was in correspondence with plantsmen all over the world, exchanging seeds and information about plant adaptation and introduction, and keeping records of it all. The Department of Agriculture in Washington soon spotted her as a source of informationa and her nurseries as a place of experimentation. As the years went by, she became known as a leading horticulturist and received many awards, the most prestigious being the Meyer Award from the American Genetic Association. She was one of the few women ever to receive it even to this day. She wrote for newspapers, for California Garden Magazine, and was one of the founders of the San Diego Floral Association in 1906, remaining a faithful and dedicated member until her death in 1940. In later years she had a comfortable chair near the front so she could hear, and always surrounded by some rare plants she wanted to talk about.

Although Kate did not like the profession of teaching, she was always a teacher, giving advice on the care of plants at her various nurseries when anyone asked. When she did drive around, she took note of plantings, never hesitating to stop and demonstrate the correct way of doing something if she saw someone doing it wrong—never minding if it offended or was not appreciated. She would even refuse to sell to a customer if she felt they would not treat the plant right.

We who enjoy Balboa Park today seldom visualize it as it was in 1892—a dry tract with only some native scrub on the outskirts of town. But that is what Kate Sessions met when she made a deal with the City to move her nursery from 5th and C Streets to the far corner of the Park at 6th and Upas. She leased 30 acres of which she eventually cultivated 10 acres and stayed there 10 years. She was appointed City Gardener and agreed to plant annually 100 trees in the City Park and furnish 300 other trees for street and school ground plantings. This contract got Kate into landscaping along with the florist and nursery business.

Although she was busy growing chrysanthemums, and importing and promoting many

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of our tropicals, it was really her tree period when she imported and experimented with palms, acacias, introduced the twisted juniper, and many new eucalyptus, pines and other trees we see every day. Kate visualized what the Park is now and by serving on the Park Commission, added so much to the Park that when it was dedicated in 1910 as Balboa Park, the honor of "Mother of Balboa Park" was bestowed upon her.

As the City grew north, in 1903, she moved her nursery to Mission Hills to a spot now occupied by the Frances Parker School. On vacant lots her brother planted poinsettias which he shipped—a beginning of an industry in our North County. In 1909, Kate sold her florist business to Alice Rainford who had worked for her for many years, and occupied herself exclusively with the nursery business. But Mission Hills was fast becoming a fashionable residential district and she moved again to Ft. Stockton Drive where the Mission Hills Nursery is still owned by a son of one of the two Antonocelli brothers whom she hired for $1.50 a day when they came from Italy in 1913.

Kate was an early conservationist and recognized the water problem in Southern California. This recognition prompted her to experiment with and introduce plants and trees which needed little water. She studied the native plants that are decorative and hardy and encouraged the use of the matilija poppy, the wild lilac, and the fremontia or flanel bush.

Always ready to move on and develop new places, Kate set up her last nursery in Pacific Beach where she also built a home. A fine old Tipuajana tree still stands where this last nursery flourished. That community has honored her with a park named for her (in 1957) and an elementary school in her honor. For one who had been active so long it was a great cross to fall when she broke her hip and was forced to spend her last days in a body cast. She remained full of plans for more beautification and was honored by visits from her many friends right to the end. Kate Sessions died on Easter Sunday March 24, 1940 at Scripps Hospital in La Jolla.

A review cannot do any more than suggest what an excellent book has in store for those who read it—this one is the story of Kate Sessions. Mrs. MacPhail closes her story with a poem found among Miss Sessions' papers which seems a fitting epitaph:

I long to dig and plant
Things in the Spring,
To feel the brown earth
Crumble in my hand,
To hear Life all around
Me wake and sing—
The Soul has roots too
In the rich dark land.

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Landscaping At Sea World

by Charles Kline

Mr. Kline is Park Horticulturist at Sea World, San Diego, California.

SEA WORLD is universally acclaimed to be one of the world's most beautifully landscaped oceanariums. In surveys, landscaping consistently comes up as one of the highlights of the guests' experience.

Rather than providing a modest perfunctory planting, the founders wanted to create a beautiful garden environment to compliment the exhibits and shows, thereby adding a new dimension to this marine park.

Winding paths, interesting waterways, and sculptured moundings add to the beauty of the plantings and also help hide crowds, lending a more relaxed feeling to the park. This mounding also provides substantial areas of good soil for the trees and shrubs, as it is built on a salt marsh, and root area is at a premium, especially for deep rooted plants.

One of the basic philosophies of the management is that the public be allowed to enjoy their visit without the feeling that they are fenced in or cannot relax on a sweep of lawn. There are virtually no signs or barriers between the guests and the plant areas except where some danger may exist, as in the crocodile exhibit. The experience of feeding and petting animals and walking up to a plant to examine it or smell its blossoms is encouraged.

The park consists of eighty acres, all of which are landscaped. At the present time there are over 420 species of plants in the Park, not counting the many varieties of annuals used for seasonal color.

A labelling program is in progress for all the major groupings of plants. The common name, botanical name and origin of the plant is placed on each label. Seasonal annuals are identified with their common and varietal names only.

A few of the interesting or striking plantings are a group of Weeping acacias, *Acacia pendula*, the large specimens of Senegal date palm, *Phoenix reclinata*, a magnificent stand of our endemic Torrey pine, *Pinus torreyana*, many fine clumps of the Giant Timber bamboo, *Bambusa oldhamii*, a large grouping of Sago palms, *Cycas revoluta,* and an extensive planting of the Kaffirboom coral tree, *Erythrina caffra*.

One of the more challenging programs was the collaboration between the Avian and the Landscape Departments in upgrading the waterfowl areas. Sea World has the largest collection of waterfowl in the country. Because of the damage and mess these waterfowl create, collections of these animals are generally dirty and not very exciting plantwise. A great effort has been made to make the areas as naturalistic as possible. Driftwood from the Olympic Peninsula in Washington, with other hollowed out logs from our local mountain areas, have been combined with lichen-covered rocks and planted with plants that will take punishment to help create a clean beautiful area for birds and a pleasing landscape as well.

Color is an important part of the landscape. Both annuals and perennials are used in beds and in clusters of pots and hanging baskets to accent or brighten building and park areas.

Through the Christmas season, poinsettias and cyclamen dominate the plantings. Late winter finds the Park bursting with the bright colors of nemesia, cinerarias, violas, pansies, primroses and calendulas. Later in the season these will be replaced by such summer flowers as marigolds, sweet alyssum, lobelia, phlox, begonias and dahlias.

Through the longest part of the year, the many varieties of flowering vines as the Bougainvillea clons, *Mandevillea* 'Alice DuPont', Guinea Gold Vine, *Hibbertia scandens*, Passion Vine, *Passiflora alato-caerulea*, Red Trumpet Vine, *Phaedranthus buccinatorius* and many others are in bloom amongst the flowering trees and shrubs which give this oceanarium the feeling of a huge park.

People are attracted not only to the shows featuring killer whales, dolphins and the other marine animals and acquarium exhibits; they also linger to enjoy this botanical wonderland which offers a kaleidoscope of colors every day of the year. □

Bare-root Roses

by George James

AT THE first of the New Year, or slightly before, it is possible to buy rose bushes bare root—that is without the roots being established in soil as they are during the growing season. The bushes are dormant at this time of year and can be taken from the spot in which they originally grew with the roots free of soil which makes them more convenient to handle. The bare root season lasts through February, but the wise gardener will select and plant his roses as early in the season as is possible to be assured of a good selection of both plants and varieties, and to have his bushes in their new home before growth starts in the spring. The majority of the rose bushes grown in California are produced in the San Joaquin Valley where there is a definite winter season which causes the plants to be fully dormant well before the end of the calendar year. As soon as the plants are dormant, they are dug and pruned and started on their way to the retail outlets. Some plants are handled from the time they are dug until they are sold without the roots being covered, which makes it necessary to protect them all along the way from heat, cold, and dryness. Other plants are covered with some kind of a package whcih does protect the plant and makes it possible for the plants to be sold from indoor locations and prolongs the selling season. Plants without protection over the roots are stored until sold in bins filled with shavings or a similar material which must be watered frequently to keep it moist. They must be kept in an area where they can be watered. One advantage of buying roses that are not packaged is that one can see the amount of root the plant has before it is bought.

Packages for roses have recently been introduced that will decompose when planted. This may well appeal to the novice rosarian, but it is likely that the experienced gardener will open the package and spread the roots out in the planting hole in much the same position as they originally grew. The roots of plants in the conventional packages are protected by being packed in an organic material which holds moisture. At the time of planting this should be removed and the roots spread out normally. If this material is left packed around the roots it will prevent the soil from flowing around the roots making a tight connection so water and nutrients can be absorbed by them. As a result, plants that are set with the packing in place may not do as well as others.

The hybridization of roses, the selective breeding to create new and better varieties, started before the 1800's, and since the revision of the Patent Laws in 1930 to include the protection of new and different varieties of plants, many new rose varieties have been created. Varieties that are protected by being patented bear a tag that gives the name of the variety, the number of the patent license issued to the variety, and a warning that asexual or vegetative reproduction of that variety is prohibited. With the advent of plant protection by the Patent Law, the hybridizers went to work and as a result the market was soon filled with many new varieties of roses, some of which had merit, many of which were slightly different and no better than existing kinds. There was a danger that the public would lose confidence if this situation was allowed to continue, and as an answer to this problem, responsible rose hybridizers and growers established the All American Rose Selection, known as AARS.

To earn this award, rose varieties are tried in over 20 locations in the continental United States, and their behavior under the different conditions of soil, climate, and care, are carefully evaluated to be sure the variety grows and flowers well and is free of weaknesses. The few new varieties that past this test are awarded the AARS designation used in advertising the variety and on the label that gives the name of the variety. It is considered a mark of excellence to be used in selecting new varieties. Some rose varieties may be found that have similar letters or words as AARS on their labels or in their advertising. However, these are merely honors bestowed upon the variety by the originator as a selling tool and are of less value than the AARS

award. Then there are other varieties of roses that do not have a patent number on their tags, and these are referred to as non-patent roses. These varieties are ones on which the patent has expired, or varieties that were in existence prior to the change in the patent law in 1930. They are less expensive than the patent varieties but there are among them some that are well worth growing. How well a gardener likes a rose depends on how it grows and performs in his garden, how well he or she likes the color and shape of the flower, and how prone the variety is to diseases. So, the AARS award is helpful because it identifies a variety that is a little above the average in vigor, flower production and perhaps disease resistance. When selecting new varieties of roses for your garden, besides reading the descriptions in catalogues or advertisements, you might inquire of friends that grow roses for their evaluation of varieties that would meet your needs. You might also look at varieties being grown in public rose gardens, or attend spring rose shows where you can see samples of many varieties and have an opportunity to talk to the rosarians that grew the flowers being displayed and from them learn the idiosyncrasies of each variety.

The Agricultural Code of the State of California provides that bare root roses, but not those growing in containers, shall be sold by grade. The Code provides that the top grade shall be known as Number 1 grade, and plants of this grade shall have three branches or canes, or signs of having had three branches, all of which originate close to the bud, and it also provides that the canes on strong growing varieties shall be longer and stouter than those of weaker growing kinds. The next lower grade is known as Number 1½ — plants having two canes. Plants that cannot qualify for this are graded Number 2. The Number 1 grade plants sell for more than the lower grades and are well worth the extra cost if they can be obtained. During some years, due to climatic conditions, there are not enough of the Number 1's to fill the needs, so 1½'s must be used if one is to plant the variety in question that season.

Bare root roses are given a minimum pruning before they reach the customer and it is usually well to look the plants over before planting and cut out thin growth, that is of a diameter less than a lead pencil. Thin slices can be cut off the ends of the roots if they have not started to callus. This is a white growth that covers the cut end of the root, sealing it against infection and once it has started there is no need to clip the ends. The clipped end of the root should reveal a clean white interior, which indicates a healthy root. If the color is brownish it indicates the root has been damaged by heat, cold, or drying and a plant with such roots will grow poorly or not at all. Any roots or branches that have been broken in handling should be cut off. A bare root plant that has a large top and a small root system will start and grow slowly, while one that has more roots than top will start and grow better. So, in cases where the top of the plant is too large, it is wise to reduce it. Roots can be treated before planting by soaking them in a solution of root forming hormone and water, mixed according to directions on the package.

The vigor with which roses grow depends upon the variety being grown, the location the plant is growing in, the soil it is rooted in, and the care given. The location where growth and flower production will be the best and where there will be the least disease is where the plant is in the sun the best part of the day. In locations that have less than half a days sun, growth and flower production will be less and diseases more likely. The wind factor should also be considered, for while some air movement around the plants is desireable, strong winds can cause movement that will lacerate both leaves and flowers. Strong winds can be reduced by use of a latticed or louvered fence, by a planting of large shrubs, or a vine covered wire fence or trellis. Soil for roses should be free of layers of hard soil in the top two feet or so, for such a layer will prevent deep root development and impede drainage. Some of the finest rose bushes this author has ever seen were grown on soil that had been excavated to a depth of six feet and back filled with improved soil. Invading roots of shrubs and trees can compete with rose bushes for food and water and as a result the growth and flower production will be less. Where the soil is not deep enough for good root development, or where there are invading roots, roses can be grown in raised beds, which will overcome the problems of compact soil and invading roots and can be filled with a soil suitable for rose

Prominent — Grandiflora (1977 AARS Award Winner)

growth. If invading roots are the problem, a cement floor should be layed on the surface of the soil to prevent the roots from growing up into the raised bed and competing with the rose roots. The walls of the raised bed can be built of any material, such as poured concrete, cement blocks, or treated wood, but in all cases seep holes should be installed along the bottom of the wall so water can drain out onto the surface of the surrounding soil. It is suggested that a raised bed should be about two feet in depth, but there is no hard and fast rule on this. Roses can be grown in a shallower depth and will take advantage of a greater depth. Plants that are in a shallow soil, or plants that are planted close together, will need more frequent waterings and feedings than those that have more root space.

It has been mentioned that rose bushes should be protected from extremes of cold, and from drying out once they have been dug from the soil. Sometimes when bushes are received the stems show signs of being dehydrated, the bark which is normally a shiney green is a dull green and it has shriveled. If the bush is planted in this condition it may not start as well as if it were well-filled with

First Edition — Floribunda (1977 AARS Award Winner)

Double Delight — Hybrid Tea (1977 AARS Award Winner)

water and this can be accomplished by soaking it in water or burying it in moist soil until the shriveled condition of the bark has vanished. It is well to remember that the roots of bare root roses will not take up water from the soil very well, due to lack of feeder roots and the low temperature that is present at the time they are planted. For this reason they would be slow in recovering from dehydration once planted. Because the roots take water from the soil slowly newly planted bushes need less irrigation and too frequent or too copious irrigations keep the soil wet, which slows root development, and may encourage decaying organisms which would damage the roots. Bare root bushes can be kept in a bucket of water to protect from drying while waiting to be planted. If a period of low humidity occurs soon after the bushes are planted, this can dry it to the point that the sprouting of the buds is slowed or stopped, and there are some bushes that have this problem even when the weather is normal and moist. These bushes can be helped by covering them with a non-absorbant material which will create a zone of moist air around the canes, but the covering should be removed as soon as the buds start to sprout. A plastic or metal pail is suitable for this; earth may be heaped up around the canes, and one firm used to supply a card board collar with their bare root bushes that was placed around the bush after planting and filled with moist shavings, peat moss, or similar material. Plastic bags have been tried for this but in some cases the bark on the canes has been burnt by the sun so they are no longer recommended.

The months following the planting of a new rose bush should be devoted to developing as much growth as is possible. As soon as the plant indicates it has become established by developing new growth it can be fertilized. Use either a special rose fertilizer or an all purpose formula will be satisfactory at this stage of development. Use the amount of fertilizer directed by the instructions and repeat at intervals of three to four weeks until growth stops in the late fall. Newly planted bushes growing among established plants will be restricted by the competition of the existing roots and they can be encouraged by foliar applications of liquid fertilizer between the root feedings given to the entire planting. The first flowers on newly planted bushes are usually not cut so as much leaf and stem is left to manufacture plant food and support additional growth. Sometimes the first flowers are small, poorly shaped, or not well colored. This results from the strain imposed upon the plant by transplanting and once the plant has become established the flowers will be of expected quality.

Growing roses can be a very rewarding hobby and a great ego builder. To those who are just starting to enjoy the Queen of Flowers, it is suggested that you will learn much and find some wonderful friends if you will join a rose society or club in your area. □

Leaf Answers Noise Pollution

A major characteristic of contemporary society is noise. Traffic sounds, sirens, super-sonic booms, machinery, amplified musical instruments, raucus voices—all have become a way of life, and, according to informed authorities, contribute to and aggravate all sorts of tension-related ailments: headaches, stomach ulcers, neuroses, mental illness, allergies, even cardio-vascular and circulatory disease.

Nature has a gift to relieve the condition, the American Association of Nurserymen says. It's a simple, green leaf. Among its many other talents, a leaf has the ability to act as an acoustical baffle, deflecting sound waves, changing their direction, reducing their intensity.

Highway engineers have become aware of this. They know that mass plantings of hedges, trees, shrubs, grass and vines can reduce the noise of heavy highway traffic by as much as 60 percent. The noise level above wide expanses of concrete can be reduced as much as threefold if the concrete surface is broken up by plantings.

Now the nation's nursery growers, garden center operators, and landscape firms in the American Association of Nurserymen are encouraging private homeowners to utilize the power of plantings to silence their surroundings. It is more than a matter of beauty, they say. It may well be a matter of survival in an otherwise too noisy world.

We Get Letters Too!

Kurt L. Olney

California Garden
San Diego Floral Association
Casa del Prado, Balboa Park
San Diego, Ca. 92101

Dear Editor:

Helen Chamlee's article, **Drouth** (July-Aug '77), was very charming and very well written. Her points on irrigation were well taken. However, I would like to add, and if I may, correct a few of her points on irrigation and water conservation.

1. Reducing the number of plants in an area may not appreciably reduce the amount of water needed to keep the remaining plants healthy. Reducing plants may expose more ground to direct sunlight and wind thus increasing soil evaporation and leaf transpiration of the remaining plants. It may become necessary, as a result, to irrigate more often.

2. Caution should be used in reducing the amount of water regularly being applied—especially if this reduction is at a rate of 1/3 to 1/2 less. Reducing water, it should be reminded, is wasting water if enough water is not reaching the roots of the plants.

3. Relatively little water is thrown away with leaf or grass clippings (nutrients are the big loss here). The removal of grass clippings is not the reason why lawns are "water-hogs". Water loss and waste on lawns and elsewhere occurs primarily at these points:

   [a] Evaporation of water at the time of irrigation before it is received by the soil.

   [b] Light, inadequate irrigation that doesn't allow for sufficient penetration and saturation of soil.

   [c] Run-off due to lawn thatch, soil compaction or a poorly designed sprinkler system.

   [d] Evaporation from soil as water is drawn up and out by wind and heat.

   [e] Transpiration through plant leaves (90% of the water taken up by the plant is lost in this manner).

   [f] Water percolating down through the soil past the root zone.

   [g] Over-watering and watering too frequently.

In my experience as a gardener, rarely has over-watering been a problem. Certainly there are cases, especially when it comes to houseplant pampering by the novice. Inadequate and improper irrigation, though, is always a problem. Guilty are those who sprinkle the top 1/8 of an inch of soil. Guilty are those who irrigate deeply but too infrequently. Even those who irrigate regularly enough to the point that the soil is damp 6 to 12 inches down may not be watering enough. Why? Because few people realize the soil has priority over the roots for moisture. The reason? Water molecules create a film around each soil particle which cannot be sucked off by plant roots. Only when the soil particles are satisfied can the roots take a drink.

How then can you determine if the water in the soil is enough? The traditional way has been to observe the plant and feel the soil. But touch doesn't always tell you if the moisture in the soil belongs to the soil particles or if it is available to the roots. And if the plant has reached the point where it is losing turgor and is beginning to show signs of stress, you've unnecessarily invited possible damage from pest and disease.

Water is becoming too precious to be left to guesswork. Tensiometers, I believe, are the best way to deal with the irrigation problem. A good tensiometer will tell you exactly how much water is available to the plant. You can be scientific about the application of your water, and you can rest your conscience about water conservation by knowing you are not wasting water by underwatering or by over-watering, by watering too frequently or too infrequently.

Of course a good tensiometer is expensive ($80-90), and it takes some practice to learn how to use it. But the results (healthier plants and water savings) are well worth the investment.

Thank you for listening,

(Signed)

Kurt L. Olney

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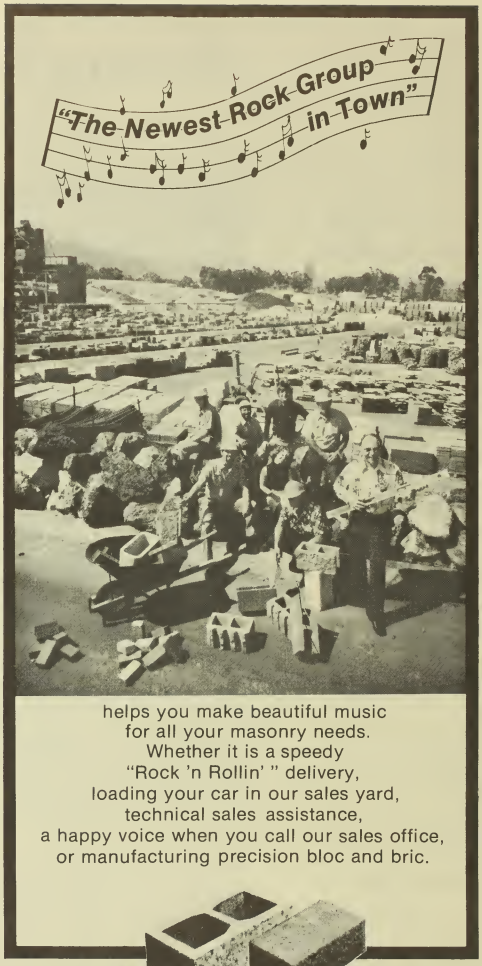

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Growing Shade Trees

by Curtis May

Reprinted from U.S. Department of Agriculture Home and Garden Bulletin Number 205.

SHADE TREES may be divided into two main groups—deciduous and evergreen. Deciduous trees produce new leaves in spring. These leaves die and drop at the end of the growing season. Evergreen trees hold their leaves for 1 or more years.

Both deciduous and evergreen trees may be either broadleaf or needle leaf. Broadleaf trees bear leaves that have broadly expanded blades. Maples, oaks, and magnolias are broadleaf trees. Needle-leaf trees have narrow, linear, needle-like leaves. Pine, larch, and spruce are needle-leaf trees.

Some kinds of trees have no leaves but have green twigs that function as leaves. Casuarina is a leafless tree. Scale-leaf trees have flattened, scale-like leaves that lie flat against the twigs. Arborvitae is a scale-leaf tree.

The size and form of different kinds of shade trees vary greatly and individual trees may deviate widely from the standard. The size and form of some common shade trees compared to the size of a house are shown in Figure 1. Branching habits also differ among the many species. Some of the general branching habits of shade trees are shown in Figure 2.

Deciduous trees generally grow faster than evergreens, but the growth rate varies among all kinds of trees. Also, the rate of growth depends on soil fertility rainfall, and temperature.

The life of shade trees varies with species, climate, and soil. In densely populated cities, and especially in some industrial areas, the life of many trees is much less than in suburban or rural areas. Diseases, insects, improper care, and air pollution also can shorten the life of a shade tree.

You should consider the rate of growth of different kinds of trees. In general, trees that grow rapidly have weak wood that is easily damaged by storms and decay. Slower-growing trees have stronger wood. However, if you want quick shade, the use of fast-growing trees may be desirable.

Also consider the size and shape of trees at maturity. A tree 35 feet tall at maturity is acceptable on the average city lot with a one-story house, but a tree 50 to 100 feet high would be too tall. However, large trees may be suitable for large yards.

Roots of elms, willows, poplars, and maples, can clog sewers. You should not plant these trees near drainage pipes. Avoid planting trees beneath telephone and power lines. Trees that grow over the roof of a house can fill the gutters with leaves, but these trees also shade the house from the hot summer sun. In general, you should not select a young tree with a divided lower trunk because it might split. The thorny fruits of sweetgum and some other trees can be a nuisance in lawns. Fruits of ginkgo smell bad when they decay. Plant only male ginkgo to avoid producing smelly fruits.

It is difficult to find a species with no faults. Balance the faults of trees against their good qualities in deciding what kind to plant.

You can obtain shade trees with the soil held around their roots by burlap, wire, or plastic. They are known as balled and burlapped trees. Trees that are sold in containers are commonly known as container-grown trees and those without soil on the roots are called bare-rooted trees.

The chances of survival usualy are high for balled and burlapped and container-grown trees. Balled and burlapped trees should have a root-ball of 1 foot in diameter for each inch of diameter of the tree trunk.

Nursery-grown trees are more likely to survive than trees dug from the woods. Root systems of nursery-grown trees usually are compact and less likely to be injured seriously when they are dug. Many arborists, nurserymen, and landscape contractors guarantee their trees for at least 1 year after they plant them.

Trees with a trunk diameter of 1.5 to 3 inches may be planted with bare roots. Larger trees

Figure 1

Tuliptree Ginkgo White spruce
Catalpa Black larch Sugar maple
Red maple Paper birch Yellowwood
Red Mulberry White oak
Willow oak Horsechestnut
Chestnut oak Sweetgum
American birch American linden
Black oak Shellback hickory
Sequoia Scarlet oak Red cedar
Mimosa Hackberry Redwood

Size of mature shade trees in relation to the height of a 2-story house. Each horizontal line represents 10 feet.

Branching habits of trees. Figure 2

should be balled and burlapped and transplanted, disturbing the roots as little as possible. Generally, as trees get larger, they cost more to buy and transplant. Get a professional tree mover to move large trees.

In general, you should plant bare-rooted, deciduous trees in autumn after their leaves change color or you can plant them in late winter or early spring, but before buds start to grow.

Spring is considered the best time to plant in areas where strong winds prevail, or where soil moisture is deficient. The drying effects of strong winds can be reduced if you water the trees and wrap their trunks and larger limbs with burlap or special protective paper.

You may plant needle-leaf evergreens anytime if you water them regularly after planting. Small needle-leaf evergreens will live in warm regions if planted bare rooted but large ones will survive better if they are balled and burlapped.

Spring is the best season to plant such broad-leaf evergreens as magnolia and holly. The best time to plant palms is during warm, wet months but you can plant them anytime if you keep them watered after planting.

Trees should be planted as soon as possible after they are dug. If you must hold them for several days, keep the roots moist. Roots die if they dry out. Sprinkle the roots of balled and burlapped trees as often as needed to keep the soil from drying. Sprinkle the tops on windy or hot days. You may cover the tops and roots of balled and burlapped trees with plastic or canvas, or with plastic over wet burlap. Do not let the roots dry out.

Bare-rooted trees that cannot be planted immediately after they are delivered may be heeled-in. To heel-in a tree, dig a trench with one sloping side. Spread the roots in the trench with the trunk resting against the sloping side. Then cover the roots with soil or a loose, moist mulch of straw, peat moss, or similar material. Keep the mulch moist until the trees are planted. Protect the tops of heeled-in trees as much as possible from drying winds. Locate the heeling-in bed in a shady place if possible.

Plant shade trees as far apart as their mature limb spread is expected to be so they can develop fully without crowding each other. You should plant most trees at least 30 feet from a house. On narrow streets and in congested areas, use trees that are relatively small at maturity.

Dig the planting hole for bare-rooted trees wide enough to spread the roots in their natural position. Do not double back the roots. The planting hole for a balled and burlapped or container-grown tree should be about 2 feet wider than the diameter of the rootball or container so fertile soil can be put around the roots.

The hole should be deep enough for the tree to be planted as deep as it was originally. However, if the soil is poorly drained, the hole should be at least 4 inches deep so a drainage system can be installed. Planting holes must be well drained for most trees to grow satisfactorily. Most trees will not grow well and some will not survive if you plant them where water stands for even a short time. You can provide drainage by putting one or two lines of 3- or 4-inch tile and a layer of gravel or crushed rock in the bottom of the hole. For holes 5 to 6 feet across, one line of tile usually is sufficient. For holes more than 6 feet across, at least two lines of tile are recommended.

Slope the bottom of the planting hole so that excess water will run to the side. Place the tile across the bottom of the hole and extend it beyond the hole to a free outlet. If the ground is level, the outlet may be a dry well filled with gravel or a storm sewer. If the ground is sloping, the tile may be extended from the bottom of the planting hole to the surface of the ground farther down the slope. Never connect the tile to a sanitary sewer because tree roots can grow into sanitary sewers and clog them.

After you lay the tile, carefully spread enough gravel or crushed rock over the bottom of the hole to hold the tile in place and cover it. Put glass cloth or roofing paper over the tile to help keep soil out of the drainage system. Then spread 2 to 3 inches of fertile soil over the cloth or paper.

If the soil is low in fertility, mix fertilizer with the soil. Well decayed leaf mold, steamed bonemeal, or similar organic material may be used. For trees 6 to 10 feet tall, mix about one-half pound of 5—10—5, 4—12—4, or a similar complete fertilizer with each 4 bushels of filling soil. The fertilizer will help stimulate early growth.

Most shade trees tolerate a considerable range of soil acidity but for best growth, some require an acid soil, some a nearly neutral soil, and some an alkaline soil. Usually, county agricultural agents, State agricultural experiment stations, or State agricultural colleges will test soil to determine acidity and the need for fertilizer. Some States charge a fee for the service.

A tree with a trunk 6 inches or more in diameter should be set with the trunk facing the same direction it was in at its original site. You may plant smaller trees without regard to orientation. When you plant a tree with bare roots, hold it in place while you adjust the roots to their natural position in the hole and cover them with soil. If you remove fertile loam from the hole, use it to cover the roots. Loam usually is sufficiently permeable to air and water for good growth of shade trees.

Heavy clay soil has poor permeability. You can make it more permeable by mixing it with as much sand as necessary to obtain good percolation of water. You can make sandy soil less permeable by mixing it with loam, clay, and organic material such as peat moss. Do not use fresh manure or fresh green plant material in the planting hole because when these materials decay they release compounds that are toxic to tree roots.

Work the soil around the roots and pack it with a blunt tool. Gently sway and shake small trees in all directions to settle the soil around the roots and to eliminate air pockets. Continue to tamp and pack the soil as you add it. When the roots are covered, tamp the soil so that it is settled firmly around the roots. Do not tamp wet soil.

Before you fill the hole completely, add

water to settle the soil. When the water has soaked into the soil, add enough soil to complete the backfill. Do not pack this soil. Then put a ridge of soil around the rim to form a low basin to hold water over the root area.

Set balled and burlapped trees in the hole with the burlap around the rootball. If the hole is too deep, lift small trees and add soil to raise the ball to the proper level. If the tree is too heavy to lift, rock it back and forth in all directions and ram soil beneath the ball until it is at the proper height. Loosen the burlap and drop it from the side of the ball. Burlap does not have to be removed from beneath the ball.

A hard crust sometimes forms on the surface of the ball. Break the crust before filling the planting hole. Pack the filling soil as it is added. Settle it with water the same as for bare-rooted trees.

If the tree is in a container, cut away the sides of the container with metal shears and remove the rootball carefully. After you remove the tree from the container, plant it the same way you plant a balled and burlapped tree.

Newly planted trees usually need support to hold them in position and to keep the roots from loosening and the crowns from breaking. Unsupported trees often lean permanently away from prevailing winds. To prevent this, install bracing stakes before you cover the roots.

One to three wooden stakes usually will support trees that have a trunk diameter of no more than 2 inches. The wooden stakes should be 6 to 9 feet long and 2 to 2½ inches square. The stakes should be strong enough to hold the trunk rigidly in place. Set stakes 3 to 18 inches from the trunk before you fill the planting hole. Fasten the trunk to the stakes with canvas tape or loops of wire passed through a section of rubber or plastic hose or similar material. Bare wire will scrape or cut the bark.

A tree with a trunk diameter of more than 2 inches usually needs three guy wires to hold it securely in place. Fix the guy wires so they can be tightened as needed. Fasten one wire to a stake driven securely in the ground on the side of the tree that is against the prevailing winds. Fasten the other two wires to stakes driven into the ground so that all three stakes form an equilateral triangle. The stakes should slope away from the tree at approximately a right angle to the slope of the guy wires. You may use a heavy log or beam (deadman) instead of a stake to anchor the guy wires. Fasten the guy wires about two-thirds of the way up the trunk of the tree. Remove the stakes and wires as soon as the tree roots are firmly established in the ground, usually in about a year.

Water trees as needed during the first and second growing seasons after you plant them. Watering thoroughly once a week is better than light daily watering. Do not saturate the soil so much that you can squeeze water from it by hand. Frequent light misting of the tops of newly planted evergreesn in early morning or late afternoon will help the leaves.

To protect the trunk of a newly planted deciduous tree from drying and from pests, wrap it spirally with strips of burlap or specially prepared paper. You can use strips of kraft paper but special crepe paper is easier to handle. Some wraps are treated to increase protection against trunk-boring insects. Overlap each turn of paper one-half the width of the strip. Reinforce the wrapping with stout cord wrapped spirally in the direction opposite to that of the paper. Tie the cord at intervals as necessary to hold the paper in place. Leave the wrap on the trunk for 2 years. If it rots away sooner, replace it. Trunks of evergreens seldom need wrapping.

Trees planted with bare roots usually have some roots missing. To compensate for the loss of roots, prune out about one-third of the top. New roots usually will grow within a few weeks and restore normal water absorption. Balled and burlapped and container-grown trees usually need no pruning when planted.

After trees are established, you should prune them to shape them and to remove dead, diseased, or mutilated parts. Reduce top growth by pruning whole branches, if possible, unless the tree has few branches and would be mutilated if whole branches were removed. Cut close to the trunk or a branch fork so that you do not leave short stubs. Do not prune the central leader of trees that normally have only one. If the central leader of these trees is removed, they will be disfigured and a new leader will not grow for many years.

(continued on page 153)

Strombocactus

by Jim Stalsonburg

HEADING NORTHEAST from San Juan Del Rio into the Mexican state of Queretaro, on the dew of a humid July morning, the sun in brazen battle dress is tempered by the lush green of grassy fields that stretch in endless cortage to the writhing fingers of the Eastern Sierra Madre. They madly tear at the wounded and bleeding sky in a vain attempt to subdue its fiery advesary.

As the long streaks of this early aurora transform into an intense blaze of staccato fury, the once proud summits are seemingly reduced to blunted shapeless knobs of twisted and blistered debris, through which your progress is marked only by a ribbon of scorched earth hanging motionless in a cadaverous void.

It is here, some 70 kilometers north of Tequisquiapan, in the shale, high up on the cut banks of the roadway the elusive *Strombocactus disciformis* quietly seeks refuge under the sparse cover of wizened shrubs. Even with precise measurements to the actual spot, the inexperienced could easily miss this prize, whose flat chiseled tubercles closely resemble, and whose color blends in monochromatic association with the surrounding ground. But, alas, the little white flower, that openly flounts the authority of the raging ruler in his noonday kingdom, attracts the eye of the collector like the matador's cape captivates the bull. As you gaze down on this thrilling sight you may be moved to say, "Little one—let me take you away from all this," and with twinkling eyes and wry little smile, the plant might be heard to answer, "I thought you'd never ask!"

"Strombocactus" comes from two Greek words meaning top shaped cactus, and alludes to the confirmation of the plant with its rounded body and tapering tuberous roots. "Disciformis" refers to the disc-shaped appearance of the plant as it lays round and flat, almost withdrawn in its native soil.

Usually, the ash-green body attains a size of 2½ inches across, sometimes larger in cultivation. The apex or growing point is somewhat depressed around which a tuft of fine bristle-like spines are borne from shingled or scale-like tubercles. The tubercles soon become bare and papery in texture. The small white flower emerges from the center, revealing white with yellowish base inner petals, while the outer ones have a slight reddish median stripe on the back side.

The principal fascination of this desert curiosity is the rhythmic arrangement of the tubercles which are similar to the small formal petalled camellia blossom of Pope Pius IX, or a petite bouton-niere. The culture for *Strombocactus* is the same as the equally slow growing *Ariocarpus*; about 2/3 sharp sand to 1/3 organic, and a couple of jiggers of lime—not the kind you get from citrus trees. Moderate watering in the summer growing period is required, and much less to completely dry in winter. It grafts well on *Myrtillocactus* and *Marginatus* stock, where it attains large proportions, as well as developing "pups". □

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Flowering Trees For Fall and Winter

by Dr. Samuel Ayres, Jr.

FALL COLOR with flowering trees sounds like a contradiction, yet it is possible to enjoy this rare privilege in Southern California with its unique Mediterranean climate. Most of us who came to California from other parts of the United States are accustomed to thinking of spring as the season of flowers, and fall as the season of colorful foliage.

There is a wealth of beautiful flowering plants that enrich our autumn and winter seasons, but many people are not familiar with some of the spectacular flowering trees that add exclamation points to our floral display. Some were introduced many years ago, but for some reason have not been easily available for landscape use, while others are new introductions and are not familiar to the average gardner citizen.

An outstanding example of one of the world's most beautiful flowering trees, *Chorisia speciosa* or Floss-silk Tree, is easily grown in average locations in Southern California. Two very old specimens may be seen at the Bel-Air Hotel west of Los Angeles, and in the grounds of the Southern California Automobile Club at Adams and Figueroa Streets in Los Angeles. During recent years these trees have become more available, and new plantings are appearing in home and commercial landscaping, along freeways and in parks. A large group of these trees on Tallac Knoll at the Los Angeles State and County Arboretum, and three 60-foot trees in the Pasadena City Hall patio grew from seeds which we gathered during a visit to Brazil in 1953.

Chorisia speciosa is indigenous to Brazil, grows rapidly from seed, ultimately attaining a height of 50 to 60 feet, and when established, tolerates a low temperature of 27 degrees Fahrenheit. It has a green, thorny trunk and during the fall months, October into December, is covered with masses of hibiscus-like pink-to-burgundy colored flowers, which are all the more spectacular because the leaves tend to drop when the blossoms appear. The trees do not always bear seeds, but when the "fruits" appear a few months later, they take the form of attractive cotton balls from which small black seeds drop down on silken threads.

Another species, *Chorisia insignis*, has a more bulbous trunk and white flowers with a light brown center of similar size and shape.

Stenocarpus sinuatus, the Australian Firewheel Tree, has everything that one could desire in a tree; a beautiful form, moderate size, evergreen oak-like leaves, and during four or five months in the fall and winter produces masses of wheel-shaped red flowers with yellow tips at the ends of the spokes, measuring two to three inches in diameter. Because the Rotary Club's emblem is the wheel, the Rotary Club of Sydney, Australia, has adopted the "Rotary Tree" and has planted a grove of them in Centennial Park in Sydney. Occasional feeding with iron chelate will insure permanent right green foliage.

There are at least three species of tree cassias which will tolerate temperatures as low as 27 degrees which will bloom in autumn, and which are as beautiful as the *Cassia fistula*, or Golden Shower Tree of the tropics. *Cassia Carnaval*, from Argentina, bearing the common name in California of Crown of Gold Tree, is of medium height and upright growth, making it suitable for a street tree. For about six weeks during September and October it produces masses of 12 to 16-inch spikes of bright yellow flowers. *Cassia multijuga* from Brazil tends to have multiple trunks and a fountain like form, with long spikes of slightly smaller golden yellow flowers, giving rise to its common name, Golden Fountain Tree. It also blooms for four to six weeks during September and October. *Cassia Leibmanii* from Mexico, attaining a height of about 20 feet, blooms both in spring and fall,

Stenocarpus sinuatus

and the arrangement of the flower clusters suggests a golden pagoda.

Cassia leptophylla from Brazil, blooming in July an August, must be mentioned even though it does not qualify as an autumn flowering tree. It has an umbrella shape and produces large, dollar-sized yellow flowers in clusters nearly as large as a basketball. It has been christened the Gold Medallion Tree.

Erythrina humeana from South Africa, one of perhaps a hundred species of Coral Trees, and unlike most of the other species which bloom in late winter or spring, puts on a display of brilliant red torch-like flowers during the autumn months.

Montanoa arborescens or the Daisy Tree from Mexico, is a small, shrubby tree with evergreen foliage which might be called a Christmas tree that grows its own ornaments. For a period of six to eight weeks during December and January, reaching a peak at Christmas, it is covered with a white cloud of daisy-like flowers, giving rise to a new version of a "white Christmas."

There are many species of eucalyptus trees of small to medium size with showy flowers at various seasons, which will be described in a later discussion. One species, however, although rarely seen, is another example of a Christmas tree that grows its own ornaments. *Eucalyptus preissiana* is a shrubby tree attaining a height of only about ten to twelve feet, bearing a profusion of bright yellow two-inch flowers in clusters for about two months during the Christmas season.

This by no means completes the list of fall and winter-blooming species of flowering trees available for the enjoyment of those fortunate enought to be living in mild climates. For a more complete description and color photographs of the species mentioned above, and other horticultural treasures, the reader is referred to a recent book entitled "Color for the Landscape," produced and underwritten as a public service by Los Angeles Beautiful, Inc., California Arboretum Foundation, Inc., Southern California Horticultural Institute, Inc., Theodore Payne Foundation for Wild Flowers and Native Plants, Inc., Descanso Gardens Guild, Inc., and South Coast Botanic Garden Foundation, Inc. The book was edited by Dr. Mildred E. Mathias, Professor of Botany, Emeritus, UCLA, and the color photographs were donated by the late Ralph D. Cornell, FASLA, to whom the book is dedicated. It may be obtained from leading bookstores, or by ordering directly from Los Angeles Beautiful, Inc., 404 South Bixel Street, Los Angeles, California 90051. □

Plants Hide Sight, Smell of Trash Dump

Every year, Americans junk seven million cars, 100 million tires, 20 million tons of paper, 28 billion bottles and 48 billion cans. All this junk and trash is responsible for the proliferation of necessary, but unsightly and foul-smelling dumps and junk yards, creating a visual pollutant in our environment.

It is probably not possible nor practical to eliminate the junkyards and dumps that dot our communities and line our highways, but the American Association of Nurserymen reports that many communities have found that trees and shrubs provide an easy way to relieve some of the offensive aspects of these trash heaps.

Thick plantings of trees, shrubs and foliage plants around the perimeters of junkyards and garbage dumps are not only helpful in screening out the visual pollution, they also are effective in reducing foul smells and dirt which emanate from trash.

Because plant life manufactures oxygen and absorbs some noxious gases such as carbon monoxide, the fresh air it produces dilutes the polluted air around dumping grouds. The hairy surface on plant leafage catches dust and dirt particles from the air, serving as a filter for surrounding waste areas. By planting trees and shrubs and other plants around dumping grounds, unattractive sights and air pollution can be reduced substantially.

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Bring Natural Environment Back Home

WHEN TODAY'S elder generation—even the middle generation—was growing up, nature, with woods and swamps and gravel roadways, was often an enemy. Escaping from nature's threats was a major challenge, and the major role of the home was to provide escape from her forces. Homes were built large and strong to give protection from nature, and were designed to accommodate most of the activities of family life within their walls.

Not so today. Now the problem we face is to bring America's families back to a natural environment in the face of all the concrete and asphalt and glass and smoke and mechanism and noise and congestion with which we spend our days. That's the position being taken by the nursery growers, garden centers, and landscape firms who make up the American Association of Nurserymen.

"Since we have subdued the forces of nature," they say, "we have to do battle with our own technology to bring nature back into out lives."

There was a need, a few decades ago, for residential architecture that was primarily intended to provide a barrier against nature. Now we have to open our walls and welcome nature back into our cities with all her gifts of order and form, rhythms, and spacial relationships—gifts in short supply in modern urban conditions.

What is needed, the people of the nursery industry say, is a new kind of architecture. The plan of the house, itself, must be "exploded" to meet the environmental needs of the whole family on all the space available in the residential lot. It's a concept that sees the walls of the home moved to the property line by using trees and shrubs and plants and grass to create additional rooms—outdoor rooms.

Some of the new "rooms" which might be included in any home plan are logical extensions of already familiar outdoor facilities. A "party room," for example, is a well thought-out decoration of the traditional patio. The "play room" is the recreation area, but with a new use of plants and shrubs and other landscaping materials to provide the best conditions for each game the family might wish to enjoy. . . badminton, a putting green, swings, a sandbox, shuffleboard, whatever . . . each in its own place and separated from other activities by natural, growing walls. The "quiet place" is a sort of outdoor "study"—the small and private area removed from the sights and sounds which intrude so often. And somewhere at the front of the house there can be a sort of outdoor "foyer"—a place that says "welcome" with plantings that create a friendly greeting room.

There is an economical imperative in this kind of planning for the family environment. Today's costs of building and land makes it impossible for most families to have the kind of large house which used to be constructed, with room inside for just about anything any member of the family wanted to do. Even aside from the environmental needs—which should have a very high priority—it is necessary for today's home to use its outdoor space in the most efficient manner, since that space has the lowest price tag.

"Nature, once an adversary to be brought into captivity," the nursery industry says, "is now being recognized as a friend . . . a vital, life-saving, healing friend. Our home planning must recognize that fact, and the places we live must include outdoor living in the family life."

The man or woman who has acquired some skill in home decorating can easily translate those talents to outdoor decorating as well. That's the opinion of the professionals who ought to know—the nation's nursery growers, garden centers, landscape designers and installers who have expressed their views through their national organization, the American Association of Nurserymen.

Unfortunately, the AAN says, the same people who have very good skills in decorating the interior of their homes—either natural talent or acquired knowledge—seem to doubt their own

ability when it comes to decorating the rooms outside . . . particularly the patio or terrace. And that is the outdoor area where decorative planning usually begins and is most important.

Three important elements in the decorative planning of a patio "party place" are privacy, beauty, and environmental health. All three factors depend, to a considerable degree, on the use of growing plant materials placed properly for the most efficient and attractive results.

Privacy is an important consideration even for people who like big, open spaces around their homes. The method for achieving the degree of privacy desired depends on the setting of the specific home and its surroundings. A home next door to a two-story house that looks down on the outdoor party room probably wants a shade tree included in the basic plan. In another case, a hedge or shrub planting will offer the screening that is needed.

Another kind of privacy must be taken into account in the outdoor party room decor. There must, in many cases, be a barrier against sun and noise. If the space is on the west side or exposed to the sun so the evening hour could be uncomfortable, then shade is important, and can be accomplished with the right kind of plantings. If a busy street is nearby, and traffic sounds intrude, a "sound protector" of shrubs and hedges can help muffle the noise.

Beauty in the surroundings adds immeasurably to the pleasure in the patio or terrace—the party place. Color spots are a major consideration in the decorative scheme, and potted plants or flower boxes of annuals or perennials often fill this need. Some amateur decorators prefer to plant flowering trees or bushes.

Members of the American Association of Nurserymen are talking a great deal, these days, about the effect of plantings on the health of our environment, and this should be a major point in planning the decor of the outdoor party place. "Trees and bushes and plants are nature's gift to improve the part of the world in which each of us lives," the nursery industry people say. "Plants help capture the impurities in the air, contribute to a breathable atmosphere, screen out noise pollution, and feed the earth."

The nursery industry has adopted the phrase "Green Survival" to encompass their philosophy regarding the role of plant materials in the environment. Survival, they say, is possible in the face of the many challenges to the ecology. And—because so much that can protect and improve our environment has to do with nature's gifts of green, growing plants and trees and shrubs and flowers, the color of survival is mostly green.

Green Survival. It depends on you! □

Fingers Touch Tobacco? Don't Touch Vegetables

Gardeners who smoke are being warned that the tobacco-stained green thumb can spread a virus disease—"tomato mosaic." Tomatoes (and to a lesser degree peppers, potatoes and others in the tomato-potato family) are susceptible to the same virus that causes tobacco mosaic disease, according to specialists at North Carolina State University who estimate that 40 percent of cigarette tobacco may be infected with the virus, which the curing process doesn't kill.

Infected leaves tend to become discolored, with a mottled light-and-dark pattern; often they are distorted or malformed.

To avoid this disease which reduces home garden yields substantially every year, smokers should eschew cigarettes and chewing tobacco in the garden. Don't smoke while handling plants and wash hands with soap and water before touching plants. □

(continued from page 146)

Diseases, insects, animals and lawn mowers or other tools may damage trees. Use an antiseptic tree wound paint on wounds 1½ inches or more in diameter. County agricultural agents and State agricultural experiment stations can provide information on the control of diseases and insects.

The wrapping on trunks of newly planted trees may give some protection against rodents and dogs. Stakes and guy wires around trees will help reduce damage by lawnmowers and other small mechanical devices. Sometimes a fence may be necessary to protect a small tree. □

LEAFIN' THRU

by Theresa Karas Yianilos

THE COMPLETE GARDEN, by Pat Falge and Arnold Legget, Oliver Press, Willits, California, distributed by Charles Scribner's Sons, New York, 1975, 240 pages, $3.95, paperback.

This is actually a catalog of sources and consists of two main indexes: a Master Index and a Company Index. One lists products and the other will tell you which companies offer that product. Here you will find all kinds of seeds and where to find them as well as other products, all related to the hobby of growing.

ARISTOCRATS OF THE TREES, by Ernest H. Wilson, Illustrated, Dover Press, N.Y. 1974, 279 pages.

This book is one of the classics in dendrology and discusses the great trees of the world from the gigantic baobab of Africa to the ginkgo and includes the economically important coconut palm. Twenty-three groups of trees are considered, with separate chapters covering the oak, elm, yew, cedar, pine, maple, beech, magnolia, spruce and sic other families. Other chapters group together the indispensables, orange, olive, bamboo, para-rubber, fruit trees, nut trees, uprights cypress, dawyck beech and pendants such as willows, weeping beech. Also covered in this complete book are the dwarfs and trees for streets, highways and pleached alleys. Trees are a fascinating subject as you will discover when you read this book by the world renowned naturalist, traveler and former keeper of the famous Arnold Arboretum at Harvard University.

MODERN WEED CONTROL by Alden S. Crafts, Illustrated, University of California Press, Berkeley, California, 1975, 440 pages.

The range and depth of the information that is presented in this book dealing with the more than 200 herbicides, MODERN WEED CONTROL should prove useful both as a text and as a reference book for agricultural technologists.

TOMATOES, THE MULTI-PLANT METHOD by Leopold Klein, William Fredrick Press, N.Y. 1974, 90 pages.

Breathes there a gardener anywhere who has not grown tomatoes? I can't imagine one in existence. The author presents his new methods of growing tomatoes, gleaned from his experience over a period of thirty years.
The hundred or more step by step photographs make it a simple quick book to read and understand and it is easy to see that a tomato enthusiast can be just as dedicated as the rose gardener to better fruit.

HARDY BULBS by Louise Beebe Wilder, Dover Publications, Inc., N.Y., 1974, 363 pages, paperback, $4.50.

Here is another of the excellent paperback books put out by Dover Publications that are reprinted editions of out-of-print books. This beautifully written volume, printed originally under the title ADVENTURES WITH HARDY BULBS, still holds much fascination for the lover of bulbs. The author's enthusiasm penetrates throughout the book.

DISEASES OF ORNAMENTAL PLANTS, by Junius L. Forsberg, University of Illinois Press, Urbana, Ill., 1975, 219 pages, $4.00.

This is a revised edition of an excellent book with good value. I suggest you send to the OFFICE OF AGRICULTURAL PUBLICATIONS, 123 Mumford Hall, Urbana, Illinois 61801 for a copy. The quality of the paper and photographs are outstand-

ing. It was written for the home gardener as well as for the professional gardener and commercial florist. The introductory section of the book deals generally with the causes and treatment of plant diseases, including the use of soil sterilization and fungicides. The greater part of the book is concerned with the causes and symptoms of the most common diseases of 60 ornamental plants, including those favorites, iris, gladiolus, rose, stephanotis, geranium, fern, English ivy, delphinium, coleus and many more that grow here in our state.

GREEN WORLD by Theresa Yianilos and Spero J. Yianilos, Illustrated, Little, Brown Co., Boston, Mass. 1976, 184 pages, $7.98.

It is with some satisfaction that your reviewer reports on this book. Spero and I received a call last August to write a book on gardening that could be used as a textbook in conjunction with a gardening course to be given by Coast College in Orange County over public television. Our deadline was 8 weeks. Since the program was going to be televised in other states, from California to Florida as well as the Northeast, we had to deal with gardening on a national level. We are happy to report that we did meet the deadline and you will find this book to be an excellent book to refer to for all your California gardening, both indoors and outdoors. Betty MacIntosh, California Garden photographer for many years, supplied us with a few photographs which you may remember seeing in this magazine. A new young photographer, Howard Matt, ran around with me snapping pictures all over San Diego and I know you will recognize some of the places, especially those taken at Old Town in the Whaley House herb garden. The book may be purchased only through the book store at the University of California at San Diego since at this time it is classified as a "text book."

Hints To Reduce Solid Waste

The enormous volume of waste we generate each year is increasing at an alarming rate, presenting a challenge we must meet, according to the American Association of Nurserymen, which provides helpful tips on ways to keep trash and garbage disposal problems down. They advise that individuals can cut their weekly refuse volume in half by a combination of these steps:

Flatten all containers including milk cartons to reduce volume.

Cut both ends of cans and flatten them—except for aerosol cans. Leave them as they are when empty.

Deposit newspapers in recycling collection points. Do not burn them.

Start a compost pile for vegetable matter refuse. When mixed with soil, it will decompose rapidly and provide nutrients that will enrich the soil. If there isn't room for a compost pile, the same effect can be achieved by burying the vegetable refuse.

Don't throw grass cuttings in garbage cans. Sprinkle them around bushes and shrubs. They will help nourish the soil.

Use lunch boxes for school lunches instead of paper bags to help eliminate part of the refuse problem.

Store food in re-usable, washable containers.

Try to use plastics over again, rather than discarding them.

Keep a litter bag in your car. Use your ash tray.

Either take nonreturnable bottles to a recycling point near you so the materials can be used for some other application that will save money and reduce disposal problems, or, better yet, buy items in returnable containers and save money.

Steps such as these, if implemented, can reduce substantially the severe refuse collection and disposal problem in this country, according to the AAN.

NOW IS THE TIME

Compiled by Penny Bunker

BONSAI

DR. HERBERT MARKOWITZ

- ✓ to keep moist—do not allow to dry out. On hot days, spray after the temperature has cooled in the evening.
- ✓ to place plants under lath to protect from burning.
- ✓ to transplant some trees with care—better to just transfer from one pot to another one size larger. Add new plant material if necessary.
- ✓ to feed young trees carefully using about 1/3 strength, to encourage the new growth.
- ✓ to trim and shape your deciduous trees.
- ✓ to wait until spring for any major transplantings.

BROMELIADS

- ✓ to feed roots and foliage with ½ strength balanced fertilizer.
- ✓ to remove off-sets for trading and gifts.
- ✓ to maintain snail control program.
- ✓ to keep surrounding areas damp to maintain humidity.
- ✓ to flush out plants and keep moist without filling.
- ✓ to protect plants from hot winds by misting in the morning and shading them from the intense heat.

CACTUS & SUCCULENTS

VERNA PASEK

- ✓ to repot root-bound plants. Watch for roots growing through drainage holes.
- ✓ to guard against Santa Ana winds and heat. Many cactus and succulents will sunburn.
- ✓ to watch for scale and mealybugs. Do isolate or separate sick plants. Try a shady resting area while under treatment. Some growers spray with full strength alcohol while others dilute rubbing alcohol and dab on with cotton.
- ✓ to plan garden changes—to plant new attractive landscape material that requires less water after becoming established.
- ✓ to divide overgrown plants and propagate new growth. Share with friends.

CAMELLIAS

CAPT. BENJAMIN BERRY

- ✓ to start and maintain disbudding program.
- ✓ to feed lightly.
- ✓ to start monthly light feedings with 2—10—10 or 0—10—10 fertilizer.
- ✓ to maintain even moisture.
- ✓ to water only in late afternoon during Santa Ana conditions.
- ✓ to maintain a regular spray program.

DAHLIAS

ABE JANZEN

- ✓ to maintain a regular watering program until first of October, then cut down gradually.
- ✓ to maintain a regular spraying program—watch for red spider and mildew.
- ✓ to feed with potash to promote root growth—aids tubers to keep better during winter.

EPIPHYLLUMS

MARY & WARREN KELLY

- ✓ to overhaul plants—trim out all dead growth. Some dieback is natural.
- ✓ to spray mist to provide moisture during a warm spell and to keep stems clean and free of dust.
- ✓ to protect new growth from breakage.
- ✓ to spray with insecticide such as malthion for control of insects during the winter months.
- ✓ to control snails and slugs—the new "Sluggeta" works.

FERNS

RAY SODOMKA

- ✓ to spray for aphids and scale. Keep snails, pill-bugs and slugs under control.
- ✓ to water and maintain humidity by keeping the surrounding areas damp. Beware of the Santa Ana winds.
- ✓ to plant fern spore.
- ✓ to fertilize plants regularly—use a high-nitrogen fertilizer.
- ✓ to trim off dead fronds.
- ✓ to shop for new varieties—replace those lost.
- ✓ to protect from the hot sun. Check shade cloth and lath as the angles of the sun are changing.

FUCHSIAS

WILLIAM SELBY

- ✓ to spray for insect control—be sure to wet the underside of the leaves as that is where they hide and lay eggs.
- ✓ to continue fertilizing for winter bloom.
- ✓ to pick off all spent blossoms and seed pods.
- ✓ to keep plants and containers clean.
- ✓ to make some early cuttings as you cut back leggy growth to shape. This also encourages new growth.
- ✓ to mist plants during hot Santa Ana days—but do not overwater.

GERANIUMS

PHIL BUSH

- ✓ to control worms, using chloradane or sevin.
- ✓ to spray soil and under leaves with Cypon E for whitefly

and aphids.

- ✓ to take cuttings; protect in shaded area until rooted.
- ✓ to cut back regals carefully.
- ✓ to feed with a high-nitrogen fertilizer such as 10—5—5 but use ½ strength.
- ✓ to water carefully; cut down as time progresses into fall and winter.
- ✓ to keep plants free of debris; cut off dead flowers and leaves.

IRIS

- ✓ to plant beardless iris. Keep moist until well-established. Japanese and Louisianas are grown with pools or swampy conditions.
- ✓ to still divide and plant clumps of tall-bearded iris.
- ✓ to feed established bearded plants.
- ✓ to control snails and slugs.
- ✓ to plant in October the Dutch bulbuous iris.
- ✓ to trim back foliage of Unguicularis so the flowers may show.

ORCHIDS

- ✓ to spray and mist during Santa Ana weather, maintain humidity and moisture.
- ✓ to continue watering and general feeding program.
- ✓ to start feeding cymbidium plants with a low nitrogen fertilizer; buds are forming now.
- ✓ to check controls and clean up the green house.
- ✓ to feed phalaenopsis a 3—1—2 solution.
- ✓ to keep the "phals" damp as they have no storage tank.
- ✓ to maintain constant surveillance for chewing and sucking insects.

ROSES

DEE THORSON

- ✓ to incorporate into the soil, 1 cup gypsum and 2 Tbsp. iron sulphate per bush.
- ✓ to fertilize with dry rose food.
- ✓ to give one foliage feeding early in September to stimulate growth.
- ✓ to continue hosing bushes with water for mite control.
- ✓ to spray with malathion or sevin if budworms appear.
- ✓ to begin preventative spraying with Parnon or Benlate for mildew control.
- ✓ to continue adequate watering with frequent hosing of bushes when temperature is high and humidity low.

VEGETABLES

GEORGE JAMES

- ✓ to plant seeds of vegetables that grow when the days are short and the nights cool, such as beets, carrots, kohlrabi, lettuce, radish, rutabaga and spinach.
- ✓ to thin seedlings of the above as directed by the instructions on the seed packet.
- ✓ to set plants from a seed bed or bought from a nursery of brocolli, Brussels sprouts, cabbage and Chinese cabbage, cauliflower, chard, kale, and lettuce.
- ✓ to try (from seeds) broad beans, that may also be known as Fava bean, Windsor bean or horse bean. These resemble lima beans, are cooked the same way, and grow the best during the cool months.
- ✓ to plant seeds of bush green or wax beans, realizing early cold could shorten the bearing period. These need 50 to 60 days to come to bearing and should be planted in a bright and warm location.

GREEN THUMB ITEMS

- ✓ to prepare bulb beds.
- ✓ to dust and stake chrysanthemums, but don't pinch back any more.
- ✓ to fertilize "mums" until bud color shows.
- ✓ to plant in October, daffodils, watsonias, scillas and jonquils.
- ✓ to divide Shasta daisies and transplant Belladonna lillies after blooming.
- ✓ to plant winter sweet peas.
- ✓ to feed established shrubs with a balanced fertilizer; water thoroughly.
- ✓ to mulch acid loving plants using peat moss, ground bark.
- ✓ to keep soil moist around azaleas, camellias, gardenias.

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Role of Fertilizers, Pesticides Explained

This is a complex world and things are not always what they seem to be. No one objects to the casting of good lawnseed about a yard, but in this age of "environmental awareness" occasionally there is an uneasiness about using fertilizer and pesticides.

Let's look at the matter a little more closely.

When you fertilize a lawn or protect it with pesticides, you encourage the grass. The more grass, the more minerals the lawn entraps . . . and the more green leaf there is to purify the air.

Ninety-eight percent of the stream pollution that does originate from the soil enters waterways because soil particles wash there. (Nutrients dissolved in run-off water account for only two percent.) A good sod certainly keeps soil from washing. Not only are the fertilizer nutrients that you provide your lawn held chemically-bound in the abundant vegetation, but the chance for their being washed away by sheet erosion is greatly reduced if the turf is growing well.

Green leaf releases oxygen "on loan" to the atmosphere. It also transpires water, freshening the air. Grass behaves much like those trickle air conditioners so much used in arid climates; it's a great coolant in summer! It also traps dust and insulates soil from temperature extremes. It may even absorb some noxious gases such as sulfur dioxide. Thus a good lawn is on the side of the angels, not vice versa, so far as the environment is concerned.

So, aside from the beauty the lawn adds, it actually helps with pollution control. No need to apologize for giving your lawn the care it needs to grow vigorously!

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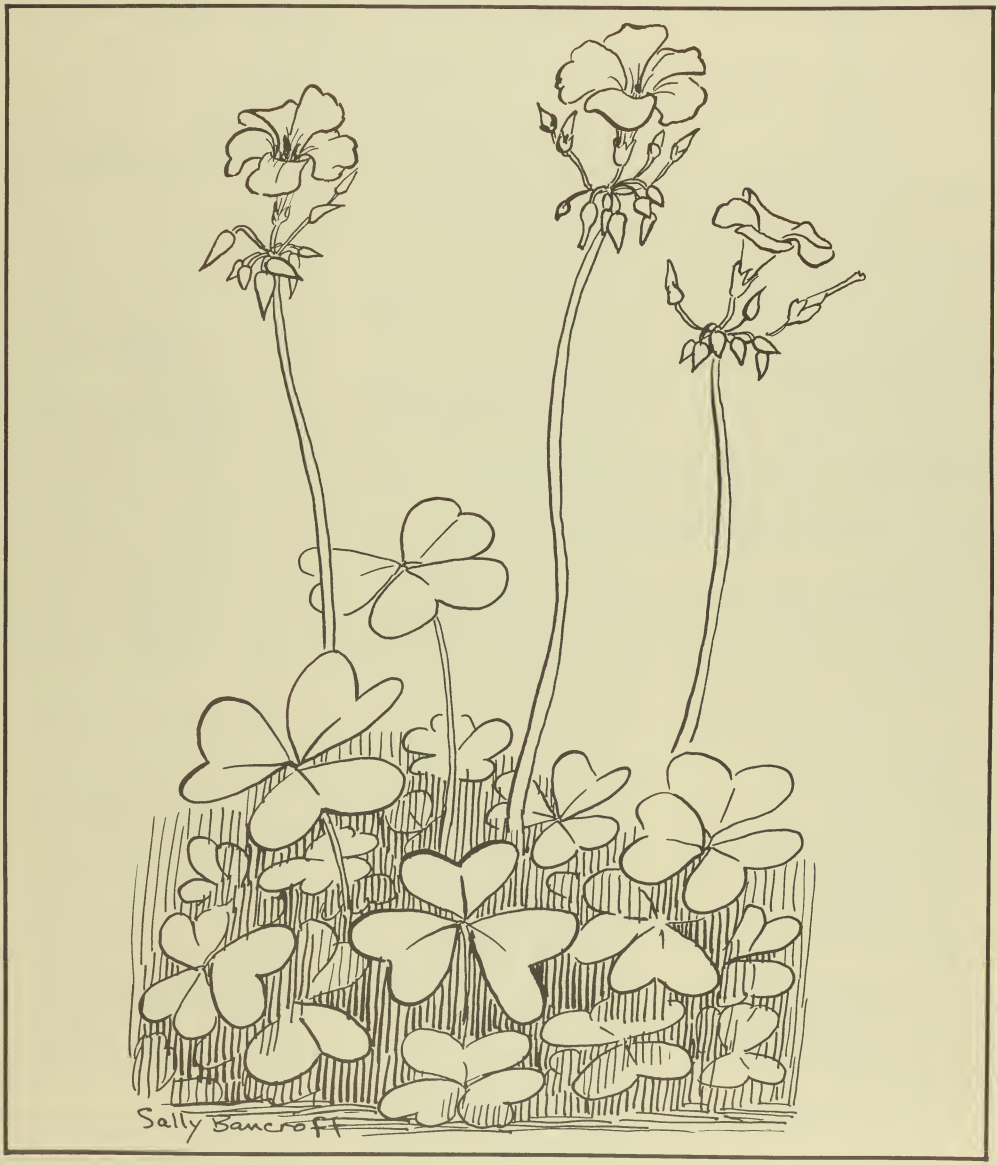
SECOND CLASS POSTAGE PAID AT SAN DIEGO